



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/560,468

11/07/2006

Hartmut Stenzel

2037.4

7417

7590
Hammer & Hanf
Suite G
3125 Springbank Lane
Charlotte, NC 28226

02/04/2009

EXAMINER

VO, HAI

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

02/04/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/560,468	Applicant(s) STENZEL ET AL.	
	Examiner Hai Vo	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 November 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,5-10 and 12-34 is/are pending in the application.
- 4a) Of the above claim(s) 18-33 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,5-10,12-17 and 34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 1794

1. The 102/103 art rejections based on Tabaksblat et al (US 6,051,618) have been withdrawn in a favor of the 103 rejections.
2. New ground of rejections are made in view of newly discovered references to Adam et al (H 1374) and Clough (US 6,019,920).

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 3, 5, 7, 8, 12-17 and 34 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Adam et al (H1374). Adam teaches a polymer particles comprising at least one void and a hydrophobic surfactant and a hydrophilic surfactant over the entire surface of the particles (abstract). The porous polyolefin particles have a particle size of 0.5 to 100 microns and a pore size of below 10 microns (column 2, lines 43-45, and column 4, lines 1-2). The surfactant includes polyglycol ethers having an HLB of 15 (column 5, lines 44-45).

As shown in example 1, the amount of the hydrophilic surfactant present in the 150 parts by weight of water is $1 \text{ wt\%} \times 100/150 = 0.66 \text{ wt\%}$. This would give the amount of the hydrophilic surfactant is 1.46 wt\% ($0.66/45 \times 100\%$) based on the weight of polymer. Further, Adam teaches the hydrophilic surfactant can be present from 0.1 wt\% to 10 wt\% based on the water phase of hydrophilic surfactant (column 4, lines 35-37). The amount of the hydrophilic surfactant in example 1 can be recalculated and present in the 150 parts by weight of water: $10 \text{ wt\%} \times 100/150 = 6.6 \text{ wt\%}$. This would give the amount of the hydrophilic surfactant is 14.6 wt\% ($6.6/45 \times 100\%$) based on the weight of polymer. The amount of the hydrophilic surfactant present from 0.146 to 14.6 wt\% based on the weight of the polymer is contemplated by the reference.

It appears that Adam meets all the structural limitations as required by the claims; a carrier comprising a plurality of particles, the particles made of a porous hydrophobic polymer substrate wherein the particles have a mean particle size, a pore size within the claimed ranges. The porous polymer particles are from a styrene polymer. Therefore, it is the examiner's position that the loadability with water would be inherently present as the same material has like property. It seems from the claim, if one meets the structure recited, the properties must be met or Applicant's claim is incomplete. This is in line with *In re Spada*, 15 USPQ 2d 1655 (1990) which holds that products of identical chemical composition can not have mutually exclusive properties. Accordingly, Adam anticipates or strongly suggest the claimed subject matter.

Art Unit: 1794

6. Claims 1, 3, 12-17 and 34 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Clough (US 6,019,920). Clough teaches a particulate carrier comprising plurality of modified PTFE particles having an open cell structure and a surfactant present over the entire surface of the particles (abstract, example 1). The modified PTFE particles have a particle size of 173 microns and a pore size of 6 microns (table). The 900 g of "surfactant concentrate" contains 3.6% zonyl FSN-100 surfactant solution (example 1). This would give the FSN-100 surfactant in an amount of $900 \times 0.036 = 32.4$ g. The amount of FSN-100 surfactant present in the particulate carrier is $32.4/600 \times 100\% = 5.4$ wt% based on the weight of the modified PTFE particles. This is within the claimed range. It appears that Clough meets all the structural limitations as required by the claims; a carrier comprising a plurality of particles, the particles made of a porous hydrophobic polymer substrate wherein the particles have a mean particle size, a pore size within the claimed ranges. The porous polymer particles are from a fluoropolymer. Therefore, it is the examiner's position that the loadability with water would be inherently present as the same material has like property. It seems from the claim, if one meets the structure recited, the properties must be met or Applicant's claim is incomplete. This is in line with *In re Spada*, 15 USPQ 2d 1655 (1990) which holds that products of identical chemical composition can not have mutually exclusive properties. Accordingly, Clough anticipates or strongly suggest the claimed subject matter.

Art Unit: 1794

7. Claims 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clough (US 6,019,920) as applied to claims 1 above, further in view of Cohen et al (US 4,229,547). Clough does not specifically disclose the non-ionic surfactant comprising fatty acid glycerides and having an HBL value of 10 to 15. Cohen, however, teaches the use of the non-ionic surfactant including fatty acid glycerides and having an HBL value of 10 to 17 to impart high porosity to substantially uniform spherical particles of polymer. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the non-ionic surfactant including fatty acid glycerides and having an HBL value of 10 to 17 motivated by the desire to impart high porosity to substantially uniform spherical particles of polymer.
8. Claims 1, 3, 5, 9, 10, 12-17 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tabaksblat et al (US 6,051,618). Tabaksblat teaches a particulate carrier comprising a plurality of porous polyolefin particles (column 4, lines 60-65). The porous polyolefin particles have a particle size of 2 to 3 mm, porosity of 0.99 cm³/g and a pore size between 0.6 to 2.2 microns (example 1). The gel particles are separated from the multiphase system (column 6, lines 13-15). Likewise, it is clearly apparent that the separated gel particles contains little or no water. A portion of the cyclohexane was evaporated when the mixture was stirred (example 1). The separated particles were dried in a vacuum stove for solvent removal, thereby obtaining the porosity of the polyolefin particles (example 1). This at least indicates that the separated polyolefin particles in the

Art Unit: 1794

final stage contain cyclohexane in an amount **less than** an original amount of 330 g to give the porosity of 0.99 cm³/g. Accordingly, the porous polyolefin particles comprise the surfactant in an amount of **at least** 0.17 wt% ($(0.63/(45+.38+330+0.63) \times 100\%)$). The surfactant includes fatty polyglycol ethers, fatty alcohol sulfonates, alkyl ammonium compounds. Since the surfactant is mixed with a polyolefin solution, the polyolefin particle would be hydrophilized over essentially its entire surface wherein the entire surface comprises the outer surface and the surface of its pores. Tabaksblat does not specifically disclose the amount of the solvent left in the particles after evaporation; that is, Tabaksblat does not specifically disclose the surfactant in the carrier having a concentration between 1 wt% to 15 wt%. However, Tabaksbat contemplates that the amount of solvent to be evaporated depends on the concentration of the polyolefin solution. The lower the concentration, the larger the amount that can be evaporated (column 5, lines 33-36). Tabaksbat further adds that "the need for evaporation and the degree to which such evaporation should take place can readily established experimentally by one skilled in the art." Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the surfactant in the range instantly claimed because the amount of the solvent left in the particles could be regulated and would be within the level of ordinary skill in the art as depending upon the concentration of the polyolefin solution. It appears that Tabaksblat meets all the structural limitations as required by the claims; a carrier comprising a plurality of particles, the

Art Unit: 1794

particles made of a porous hydrophobic polymer substrate wherein the particles have a mean particle size, a pore size and porosity within the claimed ranges.

The porous polymer particles are from polypropylene. Therefore, it is the examiner's position that the loadability with water would be inherently present as the same material has like property. It seems from the claim, if one meets the structure recited, the properties must be met or Applicant's claim is incomplete.

This is in line with *In re Spada*, 15 USPQ 2d 1655 (1990) which holds that products of identical chemical composition can not have mutually exclusive properties.

Tabaksblat does not disclose the porous polyolefin particles having a pore size ranging from 5 to 100 microns. However, Tabaksblat teaches that the pore size can be regulated by his process (column 1, lines 60-65). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to form the porous polyolefin particles having a pore size instantly claimed as dependent upon the end use of the products. This is in line with *In re Aller*, 105 USPQ 233 which holds discovering the optimum or workable ranges involves only routine skill in the art.

9. Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tabaksblat et al (US 6,051,618) as applied to claims 1 above, further in view of Cohen et al (US 4,229,547). Tabaksblat does not specifically disclose the non-ionic surfactant comprising fatty acid glycerides and having an HBL value of 10 to 15. Cohen, however, teaches the use of the non-ionic surfactant including fatty

Art Unit: 1794

acid glycerides and having an HBL value of 10 to 17 to impart high porosity to substantially uniform spherical particles of polymer. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the non-ionic surfactant including fatty acid glycerides and having an HBL value of 10 to 17 motivated by the desire to impart high porosity to substantially uniform spherical particles of polymer.

Response to Arguments

10. The art rejections based on Tabaksblat have been maintained for the following reasons. Applicants contend that Tabaksblat teaches away from the surfactant content ranging from 1 wt% to 15 wt% because in comparative experiment A, the surfactant content of 1 wt% does not make a suitable particle. The arguments are not found convincing for patentability because the concentrations of the ingredients shown in comparative experiment A are presented for the purpose of illustration only and is not intended to limit the scope of the invention. The surfactant concentration shown in comparative example A is thus completely irrelevant to the formation with the well-defined particles. Instead comparative example A implies that a nuclear agent is required to form well-defined particles. Incorporation of any limitations that exclude the nuclear agent in the carrier would be sufficient to remove Tabaksblat as prior art.

Tabaksblat does not specifically disclose the amount of the solvent left in the particles after evaporation; that is, Tabaksblat does not specifically disclose the surfactant in the carrier having a concentration between 1 wt% to 15 wt%.

Art Unit: 1794

However, Tabaksbat contemplates that the amount of solvent to be evaporated depends on the concentration of the polyolefin solution. The lower the concentration, the larger the amount that can be evaporated (column 5, lines 33-36). Tabaksbat further adds that “the need for evaporation and the degree to which such evaporation should take place can readily established experimentally by one skilled in the art.” Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the surfactant in the range instantly claimed because the amount of the solvent left in the particles could be regulated and would be within the level of ordinary skill in the art as depending upon the concentration of the polyolefin solution.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will

Art Unit: 1794

the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai Vo whose telephone number is (571) 272-1485. The examiner can normally be reached on Monday through Thursday, from 9:00 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on (571) 272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Hai Vo/
Primary Examiner, Art Unit 1794

Application/Control Number: 10/560,468
Art Unit: 1794

Page 11